ALEXFLOYDIA REPENS SIMON: A FOOD PLANT FOR *OCYBADISTES KNIGHTORUM* LAMBKIN & DONALDSON (LEPIDOPTERA: HESPERIIDAE) AND THEIR CONSERVATION SIGNIFICANCE

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Abstract

A food plant for the larvae of *Ocybadistes knightorum* is identified as the rare and locally restricted grass, *Alexfloydia repens* Simon (Poaceae). Adult females of *O. knightorum* were observed ovipositing on this grass at three localities previously recorded for this grass east of Bonville and near Boambee, New South Wales. The conservation significance of *O. knightorum* and its food plant, *A. repens*, is discussed.

Introduction

The recent discovery of *Ocybadistes knightorum* Lambkin & Donaldson near Boambee, northeastern New South Wales, has stimulated interest among butterfly conservationists due to its remarkably restricted distribution. *O. knightorum* has previously been recorded only from the type locality, Boambee Creek (Lambkin and Donaldson 1994, Atkins 1996), where the immature stages were found and adults were observed to oviposit on a grass, thought to be *Hemarthria uncinata* R. Br. (Atkins 1996). However, the distribution of *O. knightorum* is not easily explained by the distribution of this plant since *H. uncinata* is known to be widely distributed from southern and Western Australia (Baines 1981) to eastern Queensland, including the Darling Downs (Stanley and Ross 1989). Atkins (1996) suggested that *H. uncinata* was either the sole or principal food plant for this butterfly but indicated that its identity required confirmation.

A larval food plant for *O. knightorum*

In March and April 1996 at Boambee Creek, central New South Wales, several female *O. knightorum* were observed ovipositing on *Alexfloydia repens* Simon (Poaceae). In February 1997, at two other localities (Pine Creek, east of Bonville; Cordwells Creek, Boambee) where the grass was recorded by Simon (1992), several female *O. knightorum* were observed also ovipositing on *A. repens.* Larvae were found in shelters (as described by Atkins 1996) which were similar in appearance to the glumes of *A. repens* (c.f. Simon 1992). Scars from feeding by larvae on the leaves sometimes resulted in distorted spikelets and these may have been the same as those attributed to insect damage by Simon (1992).

At all localities visited between eastern Bonville and Boambee where *A. repens* was present, *O. knightorum* was also present. The butterfly was absent from similar environments where this grass was absent. *A. repens* occurs as almost monospecific stands on peat-like soils, though the peat areas are often edged nearby with alluvial or saline sandy loams supporting other grasses (e.g *Ottochloa gracillima* C.E. Hubbard).

Ecology and conservation of *O. knightorum* and its food plant

It is likely that the food plant of *O. knightorum* was misidentified in Atkins (1996) as *H. uncinata,* since the present surveys indicate that *O. knightorum* is almost certainly monophagous and dependent on the geographically restricted grass, *A. repens,* as a food plant for its larvae. Simon (1992) referred to the important conservation status of this grass and its extremely restricted distribution. To this must now be added concern for the conservation of the butterfly which appears confined to the grass and therefore at risk. Moreover, the grass may prove to be dependent on small patches of coastal peat, similar to those reported by Hegerl (1996) in the region between Fraser Island and Cooloola National Park in southeastern Queensland. The association of these peat fens with mangroves and tidal wetlands was recognised by Hegerl (1996) as having unique conservation value for flora and fauna and may now include the distinctive butterfly, *O. knightorum* in even more restricted areas. Indeed, if *O. knightorum* and the grass, *A. repens,* prove to be inter-dependent on peat substrates of similar age to those described by Hegerl (1996), the age of the fens may be well in excess of his estimate of 6,000 years.

O. knightorum and *A. repens* have been recorded so far only from four localities between Pine Creek, East Bonville and Boambee Creek, Boambee, central NSW (Simon 1992), a distance of *ca* 8 km, where at least two of the known localities for *O. knightorum* are under threat from commercial development, physical disturbance or weed invasion. One site supporting the butterfly occupies an area of only about 600 m^2. It is hoped that further surveys for *A. repens* will reveal additional localities for *O. knightorum* and that the unique ecosystems supporting these biota will be permanently preserved by appropriate state conservation authorities.

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